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ABSTRACT

This document comprises two papers on geography and map libraries and cartographic materials which were presented at the 1984 IFLA general conference. "Cartographic Materials as a Resource for National and Regional Planning and Development," by E. Hans van de Waal (Utrecht), addresses the importance of cartographic materials for development planning. It is divided into two sections: Cartographic Materials as Multi-Functional Sources of Information, including recent innovations related to earth resources satellites and synthetic aperture radar; and Public Policy-Making, Development Planning, and Cartographic Information, which addresses the possible aims of a national cartographic information policy, the need for coordination of research, and support for professional organizations. In "Geography and Map Library Equipment and Space Management as a Basis for Information and Service," Hermann Gunzel (West Germany) reports on a survey project of the IFLA Geography and Map Library Equipment and Space Management Working Group which is being conducted to help establish guidelines for map curators around the world. A copy of the questionnaire is appended. (THC)

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CARTOGRAPHIC MATERIALS AS A RESOURCE FOR NATIONAL AND REGIONAL PLANNING AND DEVELOPMENT

by

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IR 051 166

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INTRODUCTION

My paper for the IFLA Conference in the Philippines, 1980, was called: "Information policy and cartographic communication."[1] It emphasized that map producers deal in information and that, in this capacity, they belong to the field of cartography as well as to that of information science. The paper was written especially for the occasion of the foundation of the Interassociational ICA/IFLA Working Group, which was realized during the ICA Conference in Tokyo just after the IFLA Conference.

In this paper I wish to go into the importance of cartographic materials for development planning. (For those not well-versed in IFLA-jargon it may be necessary to explain that the term "cartographic materials" was chosen in concord with "non-book-materials.") Developing countries, wishing to steer their development in a certain direction, need a tremendous lot of information. This information is needed to be able to analyze specific situations, as well as to be able to follow changes during the development process.

I will also use this opportunity to adjust certain remarks made in Manila and Tokyo, now that we are four years further.

CARTOGRAPHIC MATERIALS AS MULTI-FUNCTIONAL SOURCES OF INFORMATION

Cartographic materials are images on scale of the earth's surface and related phenomena. They may occur in all kinds of shapes and sizes, and can represent widely divergent topics in their spatial coherence. Their application strongly depends on the techniques that determine their shape and contents.

Of old the earth's topography has been measured and mapped out. In most cases the motive was to record an itinerary, to state claims on property, or to represent an image of the world which has always roused encyclopedic interest. Maps and other cartographic materials have always been used, and are so today, as a means to gain an overview of phenomena in their geographical setting.

With the growing importance of thematic cartography the emphasis shifted from topography to represented subject, and it became necessary to discover spatial structures. One step further in the direction of advanced application of maps was taken when overlays were being used to relate different data with each other. Location was no longer the most important raison-d'être, but merely a mutual feature that made it possible to compare different phenomena. Examples of this structuring and correlating type of cartography are thematic map series, where the subjects differ but not the scale, and national atlases. This branch of cartography is still expanding, but I believe that there is also a growing demand for more recent and more specifically cartographic information, which requires new techniques. Here, the information is not packed into a map, which is the result of how a cartographer has interpreted his data. The information is stored in a medium in a much more original form, from which the user may choose at liberty to make his own analysis and correlations. This new and flexible use of cartographic materials is now becoming available through recent technical developments in the fields of recording, processing and storage of cartographic data.

A revolutionary development in surveying was caused by aerial photography, which has made much of the field works for topographic maps redundant in the years after World War II. Aerial photography also made it possible to have a view of extended regions, without it being necessary to compile it from a number of field surveys. The interpretation of aerial photographs has given a new stimulus to thematic mapping, as it became possible to collect material quickly on a number of topics. Aerial photographs have become full-grown cartographic materials, but have also led the way to a mixture with graphic maps: the so-called photo-maps. With the assistance of an orthophoto-projector aerial photographs can be given the same metric accuracy as on topographic maps. Many people expected the expensive and slow process of making line maps to be replaced by orthophoto projection. This has only taken place in moderation, because no solution has yet been found for the difficulty of printing (grey-)tones. The traditional use of screens, to produce a half-tone effect, is inconveniently distorting to the photo-image. Photochemical methods, such as in the random-dot and picto maps, are still being used by the problem is that these processes

can not be controlled sufficiently, so that sheets of one series can come out differently. However, recent experiments in screenless printing, using printing plates where photosensitive grains are spaced out evenly, have shown encouraging results.

Not only well-known black and white, colour and false-color photographs, but also other remote sensing techniques have now become operational. Best-known among them are the multi-spectral-scanner images recorded from Landsat-satellites, and the radar and thermal images from meteorological satellites. A few recent innovations are the more accurate ground-resolution of Landsat and earth resources satellites (planned by France and Japan), and developments in the synthetic aperture radar. SAR-techniques combine a great penetrability (for instance through vapour) with a good ground-resolution.

Except for the photographical recordings, all remote sensing data are stored in digital form and images can be produced only with the help of image processing machinery. In this way certain radiation intensities and wave lengths can be given grey-tones and colours, whereas it is also possible to deduce interpretations. The interpretations can be based on spectral as well as on temporal analyses. The necessary processing will be done interactively from behind a monitor preferably, so that results may be seen immediately. For a further application of R.S.-data it will be crucial whether or not the present trend to use micro-computers for data processing will continue. If so, these small systems will have to provide more potentials than they do now.

At first the R.S. methods served to supply basic data for further interpretations. The traditional stages were: collecting, analysis and presentation of information. Nowadays this is turning into an interrelated process, where the "final result" can be altered and updated very easily.

Automation in traditional graphic cartography developed in the same way as in R.S. Here too, automation first served as an assistant to traditional working methods. People began to digitalize maps in order to be able to draw maps with the help of plotters. This was done mainly to make sure that in later editions only the alterations would have to be added and not all the drawing work repeated. Much hardware and software were derived from Computer Aided Design, which made it possible to let the computer assist

during all production stages: from collection of data (through scanning and digital methods) via analysis and map design to map production. Not only CAD but also implementation of geodata systems, developed in the statistical-geography discipline, have a growing influence on computer assisted cartography.

The real computer-age in cartography, however, will only begin when it will be possible to link different kinds of cartographic information together. Moreover, this should be possible in two directions: in vertical direction when it concerns data in different scales, and in horizontal direction when it concerns different subjects or different kinds of R.S. data. Before this can be effectuated a number of difficulties has to be solved in the fields of computer technics, data management and cartography itself. As computers were not designed for cartography in the first place, the most important future innovations in cartography will be coming from outside that profession. A few recent developments in storage and networking must be emphasized. I refer to the papers of Gary North, chief of the National Cartographic Information Center of the United States Geological Survey, and of Cynthia Durance, chief of the Network Office of the National Library of Ottawa.

G. North, in his paper "Earth Science products for tomorrow's libraries"[2] points out the advantages of video and optical disks for the storage of gigantic quantities of information necessary in digital cartography and image processing. He maintains that "data being easily available on video disks and optical disks for use with micro computers" will be everybody's cup of tea in the future.

C.J. Durance, in her paper "Pilot implementation of an open library network concept in Canada"[3] states that "the value-added services for the interconnection of diverse systems have been designed within the framework of OSI.' OSI means Open Systems Interconnection model of the International Standard Organisation (ISO-DP 7498. NY: ISO/TC97/SC16 - Aug. 81). She defines "open" as follows: "Open: infinite number of existing and evolving systems are free to communicate with each other as required, and by which large and small systems interact as peers, rather than maintain a master/servant relationship."

PUBLIC POLICY-MAKING, DEVELOPMENT PLANNING AND CARTOGRAPHIC INFORMATION

Cartographic information is an expedient in public policy-making as well as a subject of it. Without an accurate investigation of the existing situation it is impossible to endeavour a systematically planned future. Also during the realization of the planned process it is necessary to watch the developments, so that flaws can be corrected in time. Because of the advantages of cartographic materials as spatially integrating sources of information, it is not surprising that they already play an important role in public policy-making. In many countries the production of topographic maps, soil maps and cadastral maps is stipulated in laws. There are also countries where there are statutory regulations concerning planning maps to be produced by the authorities.

When the intricate and complex process of developing a region or even a whole country has been initiated, the solution of coordination problems is often the key to success. On the horizontal level subjects can be compared in relation with each other through maps of the same scale. This will also permit professional specialists to understand what other specialists are doing. The integration in vertical direction between the various governmental levels often is an even bigger problem: the conflict between centralization and decentralization. Especially maps can present information on any desired scale in a conveniently arranged way, provided that they are generalized correctly.

In practice, it is not true that production of cartographic materials also means that they are being used a lot. New techniques naturally require some time to become widely accepted, and often they remain reserved for the higher authority levels for quite some time. The new technique has to become user friendly before it can be applied widely. One recent example is the application of R.S. imagery: although such images have been available since 1972 it is only very recent that they are being used in practice. This is not only because now new processing systems for local use are being invented, but even more, I think, because this new technology is now being combined with traditional methods. In Kenya, for instance, interesting projects are implemented where Landsat information is being used in combination with aerial photographs or 35mm recordings taken from small aircraft or helicopters.

It has been said before that new developments in information science will stimulate an integrated application of maps, etc. The concept of open information networks is not only applicable for automated network systems, but also for non-digitalized data. We need organizational provisions and systems for universal availability of information to ensure a practical use of the technical potentials. Cartographic materials are being produced in many diverse institutions. A municipal board of public building will not have much contact with the national geological survey and yet they might be inerested in each other's data; surely other parties might be interested even more. The secrecy that has so long surrounded maps, etc. should be restricted to purely military subjects. One should remember that unavailability of information is more harmful to one's own country than to "the enemy."

It is obvious that steps to stimulate the availability of cartographic materials should be incorporated in a national availability of information programme. If a cartographic information policy should be promoted in connection with a development policy, the following points should be considered.

- One of the aims of a national cartographic information policy could be the foundation of a national cartographic information centre, where information on all types of cartographic materials can be had (compare the NCIC of the HSGS). A national map collection and a collection of R.S. images (including aerial photographs) could be set up within the national library or archives, which would stimulate the correct documentation of cartographic materials. In this connection I refer to the article "The influence of new types of cartographic materials on the acquisition policy of a national map library."[4] Publication of a national bibliography of cartographic materials is one of the prerequisites for obtaining an efficient use of the cartographic infrastructure.
- The great variety of people connected with the production and application of cartographic materials makes it desirable to set up a national cartographic council, where all parties should be represented; compare the British Committee for Map Information and Catalogue Systems, founded in 1977[5].

- Coordination of research concerning technical and organisational bottlenecks restraining the optimal use of cartographic information. As a professional discipline cartography is extended and yet relatively small. Computer-assisted cartography is a derivative of CAD/CAM developments and R.S. was mainly modified by military interests. The most important topics to be studied are in the fringe areas with larger disciplines. These disciplines consider their cartographic difficulties to be of minor importance and have other priorities.

- Support for professional organisations. To be active in international and national professional organisations is not often considered to be part of the regular task of an institution or person. For the cooperation and coordination in large groups it is impossible to dispense with standards and special training. These are subjects especially undertaken by professional organisations. The work involved is often done by enthusiastic members in their spare time, but it also takes some effort in time and money from the institutions where these members are employed. Certainly at present this effort can not be provided by the smaller institutions. And yet the work should be done: a standard like the IFLA International Standard for the Bibliographic Description of Cartographic Materials has already proven its worth. The International Standard Cartographic Number, announced in a paper in 1980, proved not to be desirable. However, a draft for a publication titled "How to use the ISBN on cartographic materials" has been sent to members of the ICA/IFLA Working Group for comment. This working group has decided to publish an International Standard for the interchange of cartographic information in digital form, in 1988.

- The suggestions above are connected with the measures related to a development policy. Whether or not they can be fitted in the organisational framework of a development planning depends on the way such a planning policy is set up in a certain country. Cartographic materials are so important in the drafting process of a national, regional or sectoral plan, that it is worthwhile to spend a lot of effort on them. Not only the collection of data and production of maps should be considered in the plan, but also documentation and compatibility of information. To stipulate more organisational contacts between all participating users and producers of cartographic information could have a positive effect with a minimum of cost. A systematic approach is necessary, considering the speed of technical innovations, the inertia of (governmental) institutions and the pluriformity of cartographic materials.

For those who read this paper without seeing the illustrating slides, the text may seem too abstract. Cartographic papers are hardly interesting without actual demonstrations. Unfortunately, however, it will be some time yet before IFLA-papers will be available on video disks or optical disks.

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GEOGRAPHY AND MAP LIBRARY EQUIPMENT AND SPACE MANAGEMENT AS A BASIS FOR INFORMATION AND SERVICE

by

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GEOGRAPHY AND MAP LIBRARY EQUIPMENT AND SPACE MANAGEMENT AS A BASIS FOR INFORMATION AND SERVICE

By Hermann Günzel

Maps are a medium on which a large quantity of information can be concentrated - one of the highest concentrations of data in the pre-computer age. Maps are a source of information par excellence for those who know how to use them and to obtain the right ones.

Librarians do not like maps. No wonder: They - the maps, not the librarians - are uncomfortable to handle, difficult to catalogue and need special conditions for storage and use. Therefore, many libraries - even large and important ones - refrain from collecting maps systematically. At least, they do not have an extra map department with extra staff.

Accordingly, storage and use are often inadequate. Not only the maps suffer from these circumstances but also the users, whether public, like government agencies, or private users, because they find unsatisfactory cataloguing, classification and service, and not the information wanted. In extreme cases it happens, that maps which have been produced with great effort e. g. in some developing countries are nowhere collected and archived, get no entry in a national bibliography and finally are forgotten and lost.

The investigations for the second edition of the World Directory of Map Collections have shown that a great number of new collections have been established in the last decade, a good deal of them in the developing countries. There are three obvious reasons and perhaps some more:

1. Due to former negligence there is a general need now. Maps are discovered to be equal to books as a basis for scientific research.

2. Topographic surveys are producing maps now covering the whole area of a country.

3. Thematic cartography is of eminent importance for the economic development of a country, and that fact is more and more realized by the politicians. I only have to point to the surveying of natural resources such as oil, minerals, soils, vegetation, climate. Some socio-economic subject headings may be cited, too: Ethnic distribution, migrations, town planning, agriculture, industries.

People who generally start to work as map curators without special training beforehand often face helplessly the problems and have to gain their experience by trial and error. This situation is typical not only for developing countries, but is to be found in industrialized countries as well.

That is why training in map curatorship belongs to the tasks which the IFLA Section of Geography and Map Libraries has set itself. It tries, moreover, to prepare auxiliary handbooks in working groups. Among these there is the Geography and Map Library Equipment and Space Management Working Group. I will give you a report on the project of the working group and stress the aspect that good equipment and space management are basic for information and service.

In general, a new building or a move of the collection gives the opportunity to improve the fundamental conditions for information and service, i. e. the facilities for storage, reference, consultation, reproduction, exhibition and display. So the planned project of a manual does not deal with automated and highly complicated information retrieval systems that are able to impress even the experts who normally know by themselves all the channels that lead to the material wanted. The project is restricted to the simple and more or less conventional things that are necessary to store information on cartographic materials for a long time and to make them available for the user.

As there are no special national standards - not to speak of international ones - for the equipment and space management of map collections, the manual will at least try to establish guidelines and it will refer to the experience map curators all over the world have gathered.

To make use of this experience a questionnaire action is going on. To August 2nd, 1984, 382 questionnaires have been sent to map collections in 15 countries, for which regional mailing lists were prepared by experts of the region. In alphabetical order:

Australia, Austria, Belgium, Canada, Federal Republic of Germany, France, German Democratic Republic, Hong Kong, Italy, Netherlands, New Zealand, People's Republic of China, United Kingdom, USA. Some others will follow: Africa, India, Japan, Latin America.

There were two main reasons to spread the questionnaires so far:

The first reason was to find out whether equipment has been developed for special climatic conditions, e. g. for humid tropical climate. Up to now the result is negative, but the countries which are most interesting in this respect are not yet involved.

The second reason was to keep transportation costs low for equipment of manufacturers located in the various regions. This will - as the present state shows - lead to a long list of manufacturers and suppliers all over the world.

Up to the cited date, the 2nd of August, 144 answers were returned. 91 contain completed questionnaires, partly together with enclosed material such as floor plans and photographs. The return of questionnaires is not yet finished, the systematic evaluation by the working group has not yet begun, but the presentation of the project and its objectives and a preliminary evaluation may be allowed nevertheless. Furthermore, I will try to indicate some problems connected with the project:

The manual has to say clearly what types of equipment or what features or what details have proved to be good and what have not, but it cannot advise against certain products.

On the other hand no advertisement is allowed, but instead of this an index of equipment producing firms will be given, connected by some sort of cross references with special types of equipment.

Another problem will be how to establish guidelines or standards. Taking the average of all votes? Eliminating at first extreme data which are obviously not reasonable? Taking extremes of the right direction? For example the reasonable maximum height of the map cabinets' top surface. The votes span from 78 to 285 cm.

It was planned to present guidelines with modifications in the manual. Therefore, it is necessary to establish categories of map collections according to the type of the hosting institution, to the structure of use, the size of the collection, the necessity of differentiation in the various areas. We will come back to this item later on.

Evaluation headaches are caused by obvious contradictions in the answers, for example in the case when there is no vertical storage in the map collection, but detailed information on the vertical map cabinets in use is given.

Most of the map curators are content with the equipment they have and do not know or cannot imagine what equipment could improve their facilities. Therefore, only a few additional proposals came in. Space problems are more obvious, so that in many cases double space is required.

Let us have a look at the questionnaire now (appendix A):
Taken all together there are about 680 questions on 18 pages.
I have to confess that it is not very kind to send someone such a voluminous questionnaire. The reason why has to do with the devil. In German we have a saying that runs translated: The devil is to be found in the detail. In many cases it is the detail that makes a certain equipment satisfactory or not. Therefore, it has been necessary to design the questionnaire which tries to cover all space and equipment aspects of a map collection that detailed.

Facing the fact that such a voluminous questionnaire will frighten most people, the addressed colleagues were asked to omit all answers requiring too great an effort or give a short notice when they decided - for whatever reasons - to throw the whole questionnaire into the wastepaper basket. Nevertheless, the return ratio is astonishingly high. The fact that so many map curators have undergone voluntarily the toil of completing shows as clearly as a lot of accompanying letters that a strong demand for the projected handbook is felt.

But now to the construction of the questionnaire itself:
Address of the collection and person in charge are followed by main part A which deals with the map collection in general:
Size of collections of different types of cartographic materials, annual additions, employees, date of building and equipment and plans for renewal, total area, floor loading capacity, air-conditioning and humidity-control, lighting - all these points are designed to offer background information for what is asked for in main part B headlined "Space and equipment of different functional areas".

The different functional areas are:

1. Receiving, sorting, packing and mailing
2. Processing
3. Conservation
4. Catalogues

5. Storage of maps and plans
6. Storage of other cartographic materials
7. Reference
8. Consultation
9. Display and exhibitions
10. Reproduction

Every functional area is looked upon in terms of space and equipment. The main pattern of questions in each area and subdivision is as follows:

a) How much space is available for a special function?
b) Is it adequate?
c) How much space would be satisfactory?

And analogously for the field of equipment:

a) What procedures are applied in the functional area?
b) What equipment do you have for them?
c) Is the equipment satisfactory?
d) What would you prefer?
e) What additional equipment is required?

As some map curators who completed the questionnaire, and some who did not, pointed out, the questionnaire itself can be regarded as a help for planning and improving, because it enumerates so many aspects and problems, though it does not give the solutions and exact values which are expected to be in the manual.

As mentioned before, it has been the intention of the working group to establish guidelines and standards modified according to size and type of map collection. It still has to be ascertained whether this is possible or not.

Questionnaires were sent to map collections

a) with at least one professional full-time employee,
b) with more than 100,000 items,
c) some smaller collections.

Space requirements and equipment needs do not always depend only and directly on the size of the collection, but also on the amount of acquisitions per year and, last but not least, on the structure of use which is determined to a wide extent by the character of the costing institution and - deriving from it - the demand for information and service. Catalogue, reference, consultation and reproduction area may serve as examples for this.

On the basis of the first 50 questionnaires which have been evaluated the following typology is proposed (see appendix B):

L: Map Collections in libraries, i. e. universal libraries. These collections regularly range as departments for special holdings.

ML: A small number of universal independent map and air photo libraries may be separated.

A: Map collections in archives. Archives normally do not collect actively, but on the other hand, they often possess a great number of manuscript maps.

I: Map collections in specialized institutes or agencies, that means independent university institutes (not belonging to the central library, not part of an integrated system) as well as institutions like the Geological Survey. The restriction to single disciplines and the high degree of specialization determine the structure of information and service and the possibilities of retrieval.

A second criterium is that of the size of the collection. This value - grouped from ten to ten thousand and then from hundred to hundred thousand - is more or less constantly growing, except in some institutes, where the map collection only serves for teaching purposes. The value has to be considered for planning in any case, it indicates the primary basis for information and service.

The third criterium is the amount of annual additions: The value - grouped from thousand to thousand - is subject to change depending on the budget and other factors. It is of importance primarily for space reserves and size of processing area. It may be unnecessary to tell a map curator, but it is not always selfevident to superiors, that only constant acquisition of cartographic production can keep the map collection up-to-date and offer the information justly asked for by the user.

The number of map users per day, not always counted in separate statistics, may be the fourth criterium: It is decisive for the amount of space in the consultation and in the reference area and to the quantity and variety of equipment desirable for the use of maps.

All four criteria taken together give a profile of the map collection for reasons of equipment needs and space requirements, and they give a profile of the basis for information and service

as well. They neither say anything about the value of the holdings, for the quality of the equipment, nor the intensity of the service offered to the user. But they give a background for all the detailed information procured by the map curator in the questionnaire. To take one example:

The code "L 200 / 10 / 15" means a map collection in a universal library with a size of 200,000 - 300,000 items, with 10,000 - 20,000 additions per year and 15 users per opening day.

The typology has to be discussed, of course, amplified or simplified. I suppose that larger groups concerning the size of the collections below the 100,000 limit would be reasonable.

At the moment the typology has been applied as described in order to help handle the questionnaires.

Another help towards easier handling is to transfer and concentrate all the data from the 18 paged questionnaire onto a double A 3 sheet, a step preceding the final evaluation. Probably an evaluation by means of a computer would be preferable, but there is no existing software for this task, and therefore, I am afraid, it would mean additional delay. The great advantage would doubtlessly be located in the field of data combination, on which I will say some words at the end of this paper.

At the moment, I will try to summarize in a sort of a preliminary report, what has come out of the first 50 questionnaires. I will not present lots of numbers and cannot present final results, but I will point out some trends following the order of the questionnaire.

Compared with the total size of the collection, the non-map materials still form the minority, but it seems to be a fast growing minority as far as air photos and microfiche are concerned.

for many map collections the construction of the building and the purchase of the equipment date back less than 10 years, so that experience with up-to-date material is offered in the questionnaires.

The total area of the map collection often turns out to be inadequate at an early stage, so that cabinets have to be overfilled.

National standards specified for the floor loading capacity of map collections are non-existent or at least not known in all countries. All map cabinets are extremely heavy. Map collections therefore often are located on the ground floor. If indicated, 1,000 kp/sq.m or 200 lbs/sq.ft are recommended.

air-conditioning and especially humidity-control are in many cases not entirely satisfactory. Special treatment of the lighting to prevent ultra-violet radiation damage occurs only in a few cases, but is not so urgent when a working collection is stored in closed cabinets and no rare maps are displayed and exposed to the light.

Now to the different functional areas:
space for the functions of receiving, sorting, packing and mailing is often not in the map area, but belongs to the library. The same can be said for the equipment, if there is any special equipment at all.

Concerning the processing area the situation is similar. In general, a certain amount of annual additions must be processed, before extra space and equipment for the storage of unprocessed material, the flattening of rolled material, acquisition and cataloguing are provided.

Conservation work is mostly done by the staff of the institution, especially when the library or the archives have a conservation department or laboratory of their own. There is a wide span between collections that do nothing in this field and those where all appropriate procedures are applied, conventional starch paste mounting on linen or cotton cloth, as well as mylar film encapsulation with ultrasonic encapsulators and deacidification with magnesium hydroxide.

The catalogue area needs little space. Different formats of catalogue control are in use, card catalogues with drawers of steel, wood or plastic - all materials are satisfactory - still dominate the others, microfiche catalogues included. Automated catalogues with online terminals are desired in some collections. If properly managed by the staff and well handled by the user, they undoubtedly can offer faster service and more information than conventional catalogues, especially by the combination of geographical and other subject headings, coordinates, scale, date of publication.

Stress is laid on the storage area. Horizontal storage clearly dominates over vertical storage, storage on shelves, rolled map storage and office files storage.

The question, how many maps per square meter would be satisfactory for these types of storage, was never answered. This number which

will be helpful for easier planning, still has to be derived from other facts. Among these, are the number of drawers above each other, height of each drawer, number of maps per drawer, traffic space between the cabinets - to take only the example of horizontal drawer cabinets.

Horizontal storage is satisfactory for the "working collection" as well as for old rare or oversize maps, if at least one oversize horizontal drawer cabinet is available.

Most collections store maps of all sizes in the same drawers or it with the bigger part of their holdings. Steel is the most used and prefered material of the drawers.

The question for the depth of the drawers in use has led to some misunderstanding. It would have been better to ask for the height. In general: The shallower the drawer and the smaller the number of maps stored in it, the better for the user and the maps. Without claiming superior wisdom and anticipating the result, I would like to say, the maximum number per drawer which is easy to handle and prevents damage tends to 50 or less. You can also say: The shallower drawers are more satisfactory for rare maps, of which always only a few are stored per drawer, as well as for heavily used and variable sized maps, whereas the deeper drawers - if they cannot be avoided - are more satisfactory for little used and similar sized materials is for example sets of foreign topographic maps.

To protect the maps when the drawers are pulled in and out, the drawers are equipped with dust covers, steel clips, weights, dividers, pockets in the rear and fold back metal flaps at the front. It is too early to give recommendations, and advantage or disadvantage often depends on the precision of the workmanship.

The height of the top surface of the map cabinet should allow its use for sorting, flattening etc., that means, it should not exceed 130 cm height. To enable you to take out and refile the maps without difficulty and without a ladder, the height of the upper edge of the top drawer should not exceed 125 cm. These values were achieved, for example, by taking the average.

Vertical storage of maps almost seems to be a question of principle. Some people strictly reject it. Due to its unsatisfactory nature they have replaced existing vertical cabinets by horizontal storage.

Others point out the advantages for frequent use, especially the direct access to the sheet wanted. This may be of importance, where the users have free access to the collection. Vertical storage is mainly used for the working collection, for topographic and other sets of maps, where the maps are all of similar size.

The principle of filing, prongs and bands and - more often - envelopes and folders are used, mostly not tested for acidity.

Very long backed manuscript maps hang down from the ceiling by ans of custom-made equipment in one archive - a good solution.

Storage on shelves - vertically and to some extent horizontally, too - is practiced for folded maps with hard covers, backed and folded maps, maps with accompanying reports and map explanations.

Less satisfactory is the storage of oversized maps in boxes or folders on large open shelves.

Rolled map storage, either in or around tubes, with steel or wood roller or without roller or tube, on shelves, on wall, vertically standing or hanging or horizontally in cabinets or on open shelves all this is not satisfying for every map curator. This is the field, where lack of adequate commercially produced equipment combined with individual imagination have led to the highest ratio of custom-made equipment.

Storage in ordinary office file drawers, sometimes in folders or envelopes, is taken into consideration for folded or small maps and - in many collections - for aerial photographs: also not entirely satisfactory.

The storage of cartographic materials other than maps is looked upon separately. Atlases are in nearly every collection - on shelves, on drawers or in cabinets. Octavo and quarto atlases are mostly stored vertically on book shelves, folio volumes horizontally on larger shelves. For very heavy and large size atlases larger shelves with rollers are to be prefered. They are seldom offered by manufacturers, so individual constructions had their chance here. The instance between the shelves should remain small, so that only a few atlases can be piled on top of one another.

Aerial photographs can be stored in horizontal drawer cabinets with dividers, because of their format in regular office file drawers or in special cabinets.

Globes, raised relief maps and relief models are not very numerous, so that specialized equipment is seldom in use. The globes are mostly displayed or stand on the map cabinets, relief maps are often stored vertically in envelopes on shelves or horizontally in drawers, relief models are exhibited in glass cases or stored in large shelves.

For microfilms, microfiche and slides special cabinets are available.

Let us now leave the storage area that is often inaccessible to the user, and follow him who is eager for information to the reference area. Sometimes it is in the storage area - the opinions about this solution vary. The location of the catalogues in the reference area is unanimously considered satisfactory. Its equipment is often very modest: An information desk and a book shelf. Widely available are microfilm and - even more - microfiche readers. Apart from some exceptional collections, a data base terminal belongs either to the desired information luxury, or is not yet in sight or not considered at all. Here, I assume, some change will take place within the next decade.

As consultation area the general reading room of the institution, a separate consultation room of the map collection or the map storage area itself is used. More important than the location is whether the room has special equipment for the use of maps or not. The seating capacity is seldom a problem, for neither the average for the maximum number of consultants served per day in map collections is very impressive. Map collections are not visited by crowds of people dropping in and out, they normally have a small number of qualified users who can expect a good service.

Yearly all map collections, even those in specialized institutions are accessible not only for the members of the institutions, researchers and students, but to the interested public as well. All groups are allowed to select materials in about half the collections but seldom are allowed to refile them. Whether the regulation for use are satisfactory or not, probably depends more on clear classification and the application of folders for every 10 - 12 sheets than on the storage equipment or the qualification of the use.

Concerning the equipment of the consultation area the situation is mostly determined by an extreme lack of things that are suitable and necessary to disclose cartographic information and to meet the

users' demands. It is not enough to offer seats and regular tables. For reasons of conservation special tables with rounded edges, with a railing or a gap to prevent leaning against the map should be standard equipment in every map collection. Light table, drawing equipment, magnifying glass, stereoscope for the use of air photos and a map trolley should be selfevident.

Space for display and exhibitions should be available, too. Whether the location in the entrance hall of the institution or of the map collection, in a separate exhibition room, in the storage, reference or consultation area is to be preferred, depends on the character of the exhibition - old precious items, demonstration of map production etc. -, on the target audience and other circumstances. The locations are not alternative, they can well be combined.

Horizontal and vertical showcases form the standard equipment, covered with glass or plexiglass which is not specially treated to prevent ultra-violet radiation damage. If fastened to exhibtion walls or movable screens, the face of the map is protected by film encapsulation in a few cases, in most cases by nothing. An air-conditioned and humidity-controlled showcase is as rare as the Ebsdorf World Map.

Finally we come to the reproduction area, a very important service area as every librarian will attest. Even if we do not agree with those evil-minded persons who say: "In the universities the students don't study, they only copy", it can be stated without exaggeration that we are living in an age of reproduction. No wonder that we have to face a strong demand in the map collections, too. Any reproduction facilities are to be found in every case, at least in the host institution.

Xerox/Quick copy is most often judged unsatisfactory for the reproduction of maps. Photography, 35 mm microfilm and reader printer are more often available than microfiche, blue print and offset print. Large size colour copiers working at low costs would meet the specific service needs of map collections best.

So far the preliminary results of the questionnaire action. The detailed answers are very interesting, they mirror the experience of many committed map curators. The derived guidelines and standards shall help to improve equipment and space management. By this the

possibilities of a map collection shall be optimized, and possibilities of a map collection means primarily, how solid and how fast the information about existing cartographic material can be given and how comfortable the working facilities are.

Perhaps more interesting than the data gained directly are the combinations which can be generated from them. Factors created this way are not subject to personal impressions. They are to be considered a good basis for estimating existing situations and for planning.

You could combine the space of the storage area with the number of items and find out whether the space reserves are really exhausted or not.

You could combine the persons employed with the annual additions to get the personal capacity in the processing area.

Or the persons employed, especially professionals, to the number of users to get a factor for the possible intensity of the user service.

Let it be enough. What I could tell you about, is not finished. Where are no final results in most cases. It is a project that gets flesh to the bones now.

Appendix A:

International Federation
of Library Associations and Institutions
Division of Special Libraries
Section of Geography and Map Libraries

IFLA

MAP COLLECTION EQUIPMENT AND SPACE MANAGEMENT MANUAL

QUESTIONNAIRE

Please type or print. Use reverse of sheets or additional sheets to answer questions, when necessary.

collection and address: _____

_____

_____

_____

Name of person in charge of the collection: _____

phone number: _____ _____

MAP COLLECTION IN GENERAL

Size of collections:	Total	Annual additions
Printed and manuscript maps and plans (sheets) excluding rolled or wall maps	_____	_____
Rolled or wall maps	_____	_____
Atlases (volumes)	_____	_____
Globes	_____	_____
Relief models	_____	_____
Aerial photographs and other remotely sensed images	_____	_____
Microfilm reels	_____	_____
Microfiche	_____	_____
Slides	_____	_____
Transparencies	_____	_____
Reference books and gazetteers, other monographs	_____	_____

Number of persons employed in map collection full-time: _____
part-time: _____

Date map collection building was constructed: _____

Date of any significant alterations or additions: _____

Date equipment in use was purchased or constructed: _____

Has equipment been constructed for special climatic conditions?
If yes, for what? _____

Is a new building or the purchase of new equipment planned?
Yes __ No __

) If yes, with what manufacturers/suppliers are you in contact?

_____

_____

_____

Total area of map collection:	Is it adequate?	How much space would be satisfactory?
_____ sq.ft/sq.m	Yes __ No __	_____ sq.ft/sq.m

) Please attach floor plan, if available.

) For what floor loading capacity is the existing/planned storage area constructed? _____ lbs/sq.ft
_____ kp/sq.m

) Are there standards in your country for the safe floor loading capacity in map storage and other functional areas? Yes __ No __

If yes, please specify:

Functional area:	lbs/sq.ft kp/sq.m
_____	_____
_____	_____
_____	_____
_____	_____

Is the map collection air-conditioned?	What is the average temperature?	Does the air-conditioning work to your satisfaction?
Yes __ No __ If holdings are stored in several locations, please specify for each.	°C/°F In summer: _____ In winter: _____	Yes __ No __ Partially __ (If most of the time)

Is the map collection humidity-controlled?	What is the average humidity?	Does the humidity-control work to your satisfaction?
Yes __ No __ If holdings are stored in several locations, please specify for each.	% In summer: _____ In winte _____	Yes __ No __ Partially __ (If most of the time)

) Manufacturers' names and addresses: _____

_____

_____

With what type of lighting is the map collection equipped? _____

Is the lighting especially treated to prevent ultra-violet radiation damage? Yes __ No __

If yes, please note manufacturer(s): _____

_____

_____

How is the lighting treated? _____

_____

SPACE AND EQUIPMENT OF DIFFERENT FUNCTIONAL AREAS

Receiving, sorting, packing and mailing

How much space is available for	sq.ft/sq.m	Is it adequate? Yes	No	How much space would be satisfactory? sq.ft/sq.m
receiving	____	—	—	____
sorting	____	—	—	____
packing	____	—	—	____
mailing?	____	—	—	____

What equipment do you have for	Is the equipment satisfactory? Yes	No	What additional equipment is required?
receiving _____	—	—	_____
sorting _____	—	—	_____
packing _____	—	—	_____
mailing? _____	—	—	_____
_____			_____

Manufacturers' names and addresses: _____

_____

_____

Processing area

How much space is available for	sq.ft/sq.m	Is it adequate? Yes	No	How much space would be satisfactory? sq.ft/sq.m
storage of unprocessed material	____	—	—	____
flattening of rolled material	____	—	—	____
acquisition	____	—	—	____
cataloguing?	____	—	—	____

What equipment do you have for		Is the equipment satisfactory? Yes	No	What additional equipment is required?
storage of unprocessed material	_____	__	__	_____
flattening of rolled material	_____	__	__	_____
acquisition	_____	__	__	_____
cataloguing	_____	__	__	_____
transport of maps?	_____	__	__	_____

Manufacturers/suppliers of equipment in the processing area:

_____

_____

_____

_____

Conservation

Is conservation work done by	Yes	No
staff of the map collection	__	__
staff of the institution	__	__
commercial conservators?	__	__

How much space is available for conservation work within map collection or institution?	Is it adequate?	How much space would be satisfactory?
_____ sq.ft/sq.m	Yes __ No __	_____ sq.ft/sq.m

For what conservation procedures do you have equipment and material?		What equipment and material?	Is it satisfactory? Yes	No	What additional equipment is required?
Edging	__	_____	__	__	_____
Wet paste mounting on cloth	__	_____	__	__	_____
Lamination with film	__	_____	__	__	_____
Dry mounting	__	_____	__	__	_____

Film encapsulation	__			
Use of (acid-free?) folders	__			
Deacidification	__			
Boxing	__			
Other (please specify) _____	__			

Manufacturers/suppliers of equipment: _____

Catalogue area

How much space is available for catalogues and related instruments?	Is it adequate?	How much space would be satisfactory?
_____ sq.ft/sq.m	Yes __ No __	_____ sq.ft/sq.m

What formats of catalogue control (incl. equipment) do you have?		Is the equipment satisfactory? Yes	No	What additional equipment is required?
Inventory book	__	__	__	_____
Shelf list	__	__	__	_____
Loose-leaf files	__	__	__	_____
Index sheets	__	__	__	_____
Book catalogue	__	__	__	_____
Card index	__	__	__	_____
Card catalogue	__	__	__	_____
Microfiche catalogue	__	__	__	_____
Automated catalogue with online terminal	__	__	__	_____
Other (please specify) _____	__	__	__	_____

Are the catalogue drawers of		Is this material satisfactory? Yes	No	If not, what material would you prefer?
steel	__	__	__	_____
wood	__	__	__	_____
plastic	__	__	__	_____
other (please specify)? _____	__	__	__	_____

) Manufacturers/suppliers of equipment in the catalogue area:

_____

_____

_____

_____

Storage area: Storage of maps and plans

) How much space is available for	sq.ft/sq.m	How many sheets are stored this way (or what % of the coll.)?	Is the space adequate? Yes	No	How many maps would be satisfactory per sq.ft/sq.m?	In case of a new building what % of additional space for how many years should be planned? %	y.
horizontal storage	____	____	___	___	____	___	___
vertical storage	____	____	___	___	____	___	___
storage on shelves	____	____	___	___	____	___	___
rolled map storage	____	____	___	___	____	___	___
office files storage	____	____	___	___	____	___	___
other (please specify)?	____	____	___	___	____	___	___

_____

) Horizontal storage

) What types of material are stored in horizontal drawers?		Is horizontal storage satisfactory for this material? Yes	No	If not, what kind of storage would you prefer for this material?
Old rare maps	___	___	___	_____
"Working collection"	___	___	___	_____
Oversized maps	___	___	___	_____
Other (please specify)	___	___	___	_____

_____

) Do you store maps by size groups?		Do you store maps of all sizes in the same drawers?		Is this satisfactory? Yes	No
Yes	___	Yes	___	___	___
No	___	No	___	___	___
Some of the maps, estimate %:	___	Some of the maps, estimate %:	___	___	___

Material of drawers:		Is it satisfactory? Yes	No	What material would you prefer?
Steel	__	__	__	_____
Wood	__	__	__	_____
Other (please specify) _____	__	__	__	_____

Depth of drawers in use: in./cm	Is it satisfactory? Yes	No	What depth would you prefer?	How many maps are stored per drawer?	Maximum number, which is easy to handle and prevents damage
__	__	__	__	__	__
__	__	__	__	__	__

Are the horizontal drawers equipped with		Is it satisfactory? Yes	No	If not, what equipment would you prefer?
dust covers	__	__	__	_____
steel clips	__	__	__	_____
weights	__	__	__	_____
dividers	__	__	__	_____
other (please specify)? _____	__	__	__	_____

What is the height of the top surface of your map cabinets above the floor surface?	Can the surface of the cabinet be used for sorting etc.?	Is it necessary to use the surface of the cabinet for sorting etc.?
____ in./cm	Yes __ No __	Yes __ No __

What is the height of the upper edge of the top drawer?	Can you take out and refile the maps without difficulty?	What maximum height may the top drawer have?
____ in./cm	Yes __ No __	____ in./cm

Manufacturers/suppliers of horizontal drawer cabinets:

_____

_____

_____

_____

c) Vertical storage

a) What types of material are stored in vertical cabinets?		Is the type of cabinet in use satisfactory for this material? Yes	No	If not, what kind of storage would you prefer for the material?
Old rare maps	__	__	__	_____
"Working collection"	__	__	__	_____
Oversized maps	__	__	__	_____
Other (please specify) _____	__	__	__	_____

b) Principle of filing:		How many maps are stored per cabinet?	Maximum number, which is easy to handle and prevents damage?
Prongs and bands	__	_____	_____
Envelopes	__	_____	_____
Folders	__	_____	_____
Other (please specify) _____	__	_____	_____

c) If prongs and bands are used,		Is it satisfactory? Yes	No	What would you prefer?
what is the space between the prongs?	__ in./cm	__	__	__ in./cm
are the bands applied to the map?	__	__	__	_____
to an extension?	__	__	__	_____
has the adhesive been tested for acidity?	Yes __ No__	Result: _____		

d) If envelopes are used,

from what material are they made?	Has the material been tested for acidity? Yes	No	Result	Is the material adequate for frequent use? Yes	No	What material would you prefer?
_____	__	__	_____	__	__	_____
_____	__	__	_____	__	__	_____

e) If folders are used,

from what material are they made?	Has the material been tested for acidity? Yes	No	Result	Is the material adequate for frequent use? Yes	No	What material would you prefer?
_____	__	__	_____	__	__	_____
_____	__	__	_____	__	__	_____

cf) Manufacturers/suppliers of vertical cabinets, bands, envelopes, folders: _____

_____

_____

_____

d) Storage on shelves

da) Book shelves

	What types of maps and related materials are stored on book shelves?	Are the maps stored vertically or horizontally? Vert.	Hor.	Is the storage satisfactory for this material Yes	No	If not, what storage would you prefer?
Folded maps with hard covers	___	___	___	___	___	_____
Backed and folded maps	___	___	___	___	___	_____
Maps and accompanying reports	___	___	___	___	___	_____
Map explanations	___	___	___	___	___	_____
Other (please specify) _____	___	___	___	___	___	_____

(Rolled maps see e)

db) Large open shelves

What are the dimensions of these shelves?	What is the space between the shelves?
___ x ___ (depth) in./cm	___ in./cm

	dc) What types of maps and related materials are stored in large open shelves?	Are the maps stored in boxes, folders or in neither? (Tubes see e)	If in boxes or folders, has the material been tested for acidity? Result: Yes	No	Is this storage satisfactory for the material? Yes	No	If not, what storage would you prefer?
Oversized maps	___	_____	___	___	___	___	_____
Other (please specify) _____	___	_____	___	___	___	___	_____

dd) Manufacturers/suppliers of large open shelves: _____

_____

_____

Rolled map storage

What types of maps are stored rolled?	Are the rolled maps stored					Is this storage satisfactory?		What storage would you prefer?
	in tubes	around large tubes	with roller of: wood	with roller of: steel	without roller or tube	Yes	No	
1. Wall maps __	—	—	—	—	—	—	—	_____
2. Oversized maps and plans __	—	—	—	—	—	—	—	_____
3. Other (please specify) __	—	—	—	—	—	—	—	_____
_____								
_____								

Types of maps see ea)	Are the rolled maps stored: on wall	in cabinets: vertically: stand.	in cabinets: vertically: hang.	in cabinets: horiz.	on open racks: vertically: stand.	on open racks: vertically: hang.	on open racks: horiz.	on shelves	other (please specify)
1.	—	—	—	—	—	—	—	—	_____
2.	—	—	—	—	—	—	—	—	_____
3.	—	—	—	—	—	—	—	—	_____
									_____

continued:

Types of maps see ea)	Is this equipment satisfactory? Yes	No	If not, what equipment would you prefer for the material?
1.	—	—	_____
2.	—	—	_____
3.	—	—	_____

If stored in/around tubes

are the tubes		are the tubes tested for acidity?		are the tubes	Is this satisfactory? Yes	No
paper	—	Yes	—	one end closed		
plastic	—	No	—	both ends closed __	—	—
other(please specify)?	—	Result	_____	neither end closed? __	—	—
_____					—	—
_____						

Manufacturers/suppliers of rolled map storage equipment:

Cabinets: _____

Racks: _____

Acid-free tubes: _____

Office files storage

What types of maps are stored in ordinary office file drawers?		Are the maps stored in folders?		Are the maps stored in envelopes?		Is this satisfactory?		If not, what storage would you prefer?
		Yes	No	Yes	No	Yes	No	
Folded maps	—	—	—	—	—	—	—	_____
Small maps	—	—	—	—	—	—	—	_____
Other (please specify) _____	—	—	—	—	—	—	—	_____

If the maps are stored	in folders	in envelopes,
are these ordinary paper	—	—
acid-free paper	—	—
plastic	—	—
other (please specify)? _____	—	—

Manufacturers/suppliers of equipment for office files storage:

Office file drawers: _____

Acid-free folders: _____

Acid-free envelopes: _____

Other types of map storage

Please describe any other type of map storage used in your collection and indicate if it is satisfactory: _____

5. **Storage area: Storage of other cartographic materials**

) **Atlases**

a) Are the atlases stored

	Is the equipment		Is storage		Are the atlases stored	
	steel	wood	open	closed	horiz.	vertic.
1. on book shelves	—	—	—	—	—	—
2. on larger shelves	—	—	—	—	—	—
3. on larger shelves with rollers	—	—	—	—	—	—
4. in drawers	—	—	—	—	—	—
5. in cabinets	—	—	—	—	—	—
6. other (please specify)? _____	—	—	—	—	—	—

a) continued:

	If stored horizontally, are the atlases piled on top of one another?		what is the distance between the shelves or the depth of the drawer?	Is this storage satisfactory?		If not, what storage would you prefer?
	Yes	No	in./cm	Yes	No	
1.	—	—	___	—	—	_____
2.	—	—	___	—	—	_____
3.	—	—	___	—	—	_____
4.	—	—	___	—	—	_____
5.	—	—	___	—	—	_____
6.	—	—	___	—	—	_____

a) Manufacturers/suppliers of atlas storage equipment:

Larger shelves: _____ _____

Larger shelves with rollers: _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

) **Aerial photographs and other remotely sensed images**

Briefly explain method of storage and indicate if it is satisfactory. In case of special equipment note manufacturer:

_____ _____

_____ _____

_____ _____

_____ _____

) Globes, raised relief maps, relief models

Briefly explain methods of storage and indicate if they are satisfactory. In case of special equipment note manufacturers:

_____
_____
_____
_____

) Microfilms, microfiche, slides, transparencies and other items except books

Briefly explain methods of storage and indicate if they are satisfactory. In case of special equipment note manufacturers:

_____
_____
_____
_____

Reference area

) Is the reference area within the storage area? Yes __ No __	Has it proved to be satisfactory? Yes __ No __
) Are the catalogues located in the reference area? Yes __ No __	Has it proved to be satisfactory? Yes __ No __

) What equipment do you have in the reference area?		Is it satisfactory? Yes	No	What additional equipment is necessary?
Information desk	__	__	__	_____
Book shelves	__	__	__	_____
Data base terminal	__	__	__	_____
Microfilm reader	__	__	__	_____
Microfiche reader	__	__	__	_____
Other (please specify)	__	__	__	_____

_____
_____

) Manufacturers/suppliers of equipment in the reference area:

_____
_____
_____
_____

Consultation area

) Are the maps used in		Has the room special equipment for the use of maps?		Seating capacity			Is the room suitable for the use of maps?	
				No. of seats	Is the seating capacity satisfactory?		How many seats are necessary?	
		Yes	No		Yes	No		Yes No
the general reading room of the institution	—	—	—	—	—	—	—	— —
a separate consultation room of the map coll.	—	—	—	—	—	—	—	— —
the map storage area	—	—	—	—	—	—	—	— —
another room (please specify)?	—	—	—	—	—	—	—	— —
_____								

) Average number of consultants served per day: ____

Maximum number of consultants served per day: ____

) Access to map collection for:		Are users allowed free access to				If yes, has it proved to be satisfactory?		If yes, does this depend on the			
		select material		refile material				storage equipment in use?		qualification of the user?	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Members of the institution	—	—	—	—	—	—	—	—	—	—	—
Researchers	—	—	—	—	—	—	—	—	—	—	—
Students	—	—	—	—	—	—	—	—	—	—	—
Public	—	—	—	—	—	—	—	—	—	—	—
Other (please specify)	—	—	—	—	—	—	—	—	—	—	—
_____											
_____											

) What equipment do you have in the consultation area?		Is it satisfactory?		What additional equipment is required?
		Yes	No	
Seats	—	—	—	_____
Swivel seats	—	—	—	_____
Regular tables	—	—	—	_____
Special tables				_____
with rounded edges	—	—	—	_____
with a railing to prevent leaning against the map	—	—	—	_____
with a gap for the map to prevent leaning against it	—	—	—	_____
				_____
				_____
				_____

d) continued:

Light table	__	__	__	_____
Lights	__	__	__	_____
Drawing equipment	__	__	__	_____
Magnifying glass	__	__	__	_____
Transport vehicle for maps	__	__	__	_____
Other (please specify)	__	__	__	_____

_____

_____

e) Manufacturers/suppliers of equipment in the consultation area:

Special table: _____

Light table: _____

Transport vehicle for maps: _____

_____

_____

_____

_____

_____

_____

_____

_____

Display and exhibitions

a) Is there any space for display and exhibitions? Yes __ No __

b) Is the exhibition space located in		Is this satisfactory? Yes	No	What location would you prefer?
the entrance hall of the institution	__	__	__	_____
the entrance hall of the map collection	__	__	__	_____
a separate exhibition room	__	__	__	_____
the storage area	__	__	__	_____
the reference area	__	__	__	_____
the consultation area	__	__	__	_____
another room (please specify)?	__	__	__	_____

_____

_____

c) What equipment do you have for display and exhibitions?	By what is the face of the map protected during the display period?	Is the glass of the showcase especially treated to prevent ultra-violet radiation damage? Yes	No	Is the equipment satisfactory? Yes	No	What additional equipment is required?
Tables ___	_____	___	___	___	___	_____
Horizontal showcase ___	_____	___	___	___	___	_____
Vertical showcase ___	_____	___	___	___	___	_____
Air-conditioned and humidity-controlled showcase ___	_____	___	___	___	___	_____
Exhibition wall ___	_____	___	___	___	___	_____
Movable screens ___	_____	___	___	___	___	_____
Other (please specify) ___	_____	___	___	___	___	_____
_____						
_____						

d) Manufacturers/suppliers of equipment for display and exhibition:

Horizontal/vertical showcase: _____

Air-conditioned and humidity-controlled showcase: _____

Movable screens: _____

_____ _____

_____ _____

_____

_____

_____

_____

_____

_____

Reproduction

a) Are there any facilities for the reproduction of maps in the institution? Yes __ No __

b) Are the reproduction facilities located in		Is the location satisfactory? Yes	No	What location would you prefer?
the institution	___	___	___	_____
the map collection	___	___	___	_____
a separate room of the map collection	___	___	___	_____
another room (please specify)?	___	___	___	_____
_____				

c) What reproduction facilities are available?		Are the facilities satisfactory for the reproduction of maps? Yes	No	What additional facilities are required?
Xerox/Quick copy	—	—	—	
Photostat	—	—	—	
Colour copy	—	—	—	
Photography	—	—	—	
Microfilm 16 mm	—	—	—	
35 mm	—	—	—	
70 mm	—	—	—	
105 mm	—	—	—	
Microfiche	—	—	—	
Reader printer	—	—	—	
Blueprint	—	—	—	
Offset print	—	—	—	
Other (please specify)	—	—	—	

d) Manufacturers/suppliers of reproduction equipment:

e) If no facilities for reproduction are available in the institution,

do you allow material to be reproduced in the map collection by researcher? Yes	No	is material sent to commercial firms? Yes	No	If yes, do have special regulations for the handling and reproduction of your maps? Yes	No	If yes, what regulations?
—	—	—	—	—	—	

Size (all items)	Map coll. in libraries	Independent map libraries	Map coll. in archives	Map coll. in institutes
1,000- 10,000	L 1	ML 1	A 1	I 1
10,000- 20,000	L 10	ML 10	A 10	I 10
20,000- 30,000	L 20	ML 20	A 20	I 20
30,000- 40,000	L 30	ML 30	A 30	I 30
40,000- 50,000	L 40	ML 40	A 40	I 40
50,000- 60,000	L 50	ML 50	A 50	I 50
60,000- 70,000	L 60	ML 60	A 60	I 60
70,000- 80,000	L 70	ML 70	A 70	I 70
80,000- 90,000	L 80	ML 80	A 80	I 80
90,000-100,000	L 90	ML 90	A 90	I 90
100,000-200,000	L 100	ML 100	A 100	I 100
200,000-300,000	L 200	ML 200	A 200	I 200
300,000-400,000	L 300	ML 300	A 300	I 300
400,000-500,000	L 400	ML 400	A 400	I 400
ff				

Annual additions		Users per day	
0- 1,000	... / 0	1	... / ... / 1
1,000- 2,000	... / 1	2	... / ... / 2
2,000- 3,000	... / 2	3	... / ... / 3
3,000- 4,000	... / 3	4	... / ... / 4
4,000- 5,000	... / 4	5	... / ... / 5
5,000- 6,000	... / 5	ff	
6,000- 7,000	... / 6	10	... / ... / 10
7,000- 8,000	... / 7	11	... / ... / 11
8,000- 9,000	... / 8	12	... / ... / 12
9,000-10,000	... / 9	ff	
10,000-20,000	... / 10	101	... / ... / 101
20,000-30,000	... / 20	102	... / ... / 102
30,000-40,000	... / 30	103	... / ... / 103
40,000-50,000	... / 40	104	... / ... / 104
ff		ff	

Example: L 200 / 10 / 15: Map collection in library
Size: 200,000-300,000 items
Annual additions: 10,000-20,000 items
15 users per opening day

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If available, please attach photographs of the map collection and its equipment (of selfmade equipment, too!) or make simple drawings to explain details on extra sheet.

Please indicate if any information given is to be treated confidentially: _____

_____

_____

Name of person
who has completed questionnaire: _____

Date: _____

PLEASE RETURN COMPLETED QUESTIONNAIRE TO :

Hermann Günzel
Universitätsbibliothek
Wilhelm-Röpke-Str. 4
D-3550 Marburg/Lahn
West Germany